

transistors coupled in series as recited in amended claim 37 are shown in Figure 4 and described in the specification at page 8, lines 9-18. Withdrawal of this objection is respectfully requested.

Claims 32 and 34-37 stand rejected under 35 U.S.C. § 112, ¶1. The Office Action states that the specification does not provide support for the following elements: a further semiconductor switching device; a free wheeling diode and a short-circuiting transistor used together; and transistors coupled in series. Contrary to the Examiner's assertions, the specification does provide support for "a further semiconductor switching device." The specification, at page 4, lines 28-33, states that "the transistor T, which is an MOS field effect transistor," and as well known in the art, "MOS" is an acronym for "metal oxide semiconductor." In addition, as stated above, the specification also provides support for a freewheeling diode and a short-circuiting transistor used together, at page 6, lines 12-24. Also as stated above, the transistors as recited in amended claim 37 are described at page 8, lines 9-18. Based on the foregoing, withdrawal of this rejection is respectfully requested.

Claim 29 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,825,139 to Hamelin et al. ("Hamelin reference"). Applicants respectfully maintain that the Hamelin reference merely discloses a "chopping" function, which cannot be equated to the step-up converter function of amended claim 29. The Hamelin reference clearly states that it is desirable to deliver current at less than maximum strength and to use a separate chopper device as a means to reduce current strength. (Hamelin reference, Col. 2, ll. 20-24). In contrast, amended claim 29 does not recite the step-up converter function as a means to deliver less than maximum current. Furthermore, the specification does not describe the step-up converter function as a means to deliver less than maximum current. The Hamelin reference consistently refers to the delivery of current in the "chopping" mode and does not implicitly or explicitly equate the chopper device to a step-up converter.

As stated in the prior communication from Applicants, the dictionary definition of a step-up converter provided by the Examiner does not mention voltage chopping and does not characterize voltage chopping as equivalent to step-up conversion operation. The dictionary definition merely describes, without ever mentioning voltage chopping, how an output voltage greater than an input voltage is produced. Accordingly, the dictionary definition cannot establish that the chopping function in the Hamelin reference equates to a step-up converter. Amended claim 29 clearly recites a step-up converter, not a chopping device as

disclosed in the Hamelin reference. Based on the foregoing, withdrawal of this rejection is respectfully requested.

Claims 1-6, 8-10, 13-18, 20-22, 30, 31, and 33 stand rejected under 35 U.S.C. § 103 as unpatentable over the Hamelin reference in view of U.S. Patent No. 5,793,625 to Balogh (“Balogh reference”). Contrary to the Examiner’s comments in paragraph 6 of the Office Action, Applicants did not state that the capacitor C disclosed in the Balogh reference functions as a smoothing capacitor. As stated in the prior communication, the Balogh reference discloses a decoupling capacitor C which provides an output with a significant ripple. Accordingly, the decoupling capacitor C cannot be equated with the smoothing capacitor recited in claim 1. Furthermore, the Hamelin reference does not cure the deficiencies of the Balogh reference as applied against claim 1.

Based on the foregoing, even if one skilled in the art were to combine the Hamelin and Balogh references, one would not be able to achieve the subject matter of claim 1. Claims 2-6, 8-10 and 31 depend from claim 1, so the above argument in regard to claim 1 applies equally to claims 2-6, 8-10 and 31. Claims 13-18, 20-22 and 33 also recite the feature of a smoothing capacitor, accordingly the above argument in regard to claim 1 applies equally to claims 13-18, 20-22 and 33.

In regard to claim 30, claim 30 depends from amended claim 29. As stated above, the Hamelin reference does not anticipate amended claim 29, and the Balogh reference does not cure the deficiencies of the Hamelin reference as applied against claim 29. Moreover, claim 30 includes the smoothing capacitor feature as recited in claim 1. Accordingly, based upon the arguments set forth in connection with amended claim 29 and claim 1, even if one skilled in the art combined the Hamelin and Balogh references, one would not achieve the subject matter of claim 30. Withdrawal of this rejection is, therefore, respectfully requested.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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